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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,498	04/12/2004	Rajeev Sharma	AI-0018-DFM	3581
7590		12/28/2007		
Rajeev Sharma Advanced Interfaces, Inc. Suite 104 403 South Allen Street State College, PA 16801			EXAMINER VANCHY JR, MICHAEL J	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/822,498	Applicant(s) SHARMA ET AL.	
	Examiner Michael Vanchy Jr.	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/12/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14, 29, and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 14 describes using "non-rigid transformation" for the purpose of "affect synthesis," neither of which is described within the specification. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13, 15-28, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Maurer et al., US 6,272,231 B1.

**Regarding claim 1:**

A method for face modeling (Fig. 17), comprising the steps of: (a) capturing a plurality of images for an individual (Fig. 14 and col. 12, lines 24-27) with a single or a plurality of image capturing systems (Fig. 2, item "12"), (b) processing said plurality of images to obtain demographic recognition in said images (col. 5, lines 29-46), and (c) combining said demographic recognition with affine coordinate based mesh adjustment technique for said face modeling (Fig. 17, col. 5, lines 29-46, and col. 9, lines 21-23).

**Regarding claim 2:**

The method according to claim 1, wherein the method further comprises a step for using said demographic recognition based on one face image among said plurality of images to determine an approximate face model (col. 5, lines 29-46).

**Regarding claim 3:**

The method according to claim 1, wherein the method further comprises a step for displaying visual feedback about said face modeling (Fig. 1, item "20").

**Regarding claim 4:**

The method according to claim 1, wherein said demographic recognition further comprises gender recognition (col. 5, lines 41-46).

**Regarding claim 5:**

The method according to claim 1, wherein said demographic recognition further comprises ethnicity recognition (col. 5, lines 41-46).

**Regarding claim 6:**

The method according to claim 1, wherein the method further comprises a step for using affine lines and their slope adjustment, which is proportional to depth of the point, for model estimation (Fig. 11 and col. 9, lines 51-57).

**Regarding claim 7:**

The method according to claim 1, wherein said face modeling further comprises a step for using said affine line properties without the need for calibrating the cameras (col. 11, lines 57-61, col. 12, lines 3-16).

**Regarding claim 8:**

The method according to claim 1, wherein said face modeling further comprises a step for using said affine line properties without the need for having continuous video (Figs. 14, 17, col. 11, lines 57-61 and col. 12, lines 24-27, 43-46).

**Regarding claim 9:**

The method according to claim 1, wherein the method further comprises a step for using said affine line properties for re-projecting a matched pair in two images to a third image, once four facial landmarks are located in all three images (Fig. 17, and col. 5, lines 29-46).

**Regarding claim 10:**

The method according to claim 1, wherein the method further comprises a step for using a single view (col. 12, lines 39-46, The examiner takes into account that since the two images, frontal and side, do not have to be taken simultaneously, that when the frontal image is only used the model is crudely made, until the addition of the side view is incorporated.) to crudely model face based on gender and ethnicity and then use anthropometric measures for identification (Fig. 17, col. 5, lines 29-46, and col. 9, lines 21-23).

**Regarding claim 11:**

The method according to claim 1, wherein the method further comprises a step for using multiple views (col. 12, lines 24-27) to model said face in the image based on the combination of the demographics and said affine line measures for identification purposes (Fig. 17, col. 5, lines 29-46, and col. 9, lines 21-23).

**Regarding claim 12:**

The method according to claim 1, wherein the method further comprises a step for using said combination of said demographics and said affine line properties for face modeling, followed by novel view generation of the face using rendering tools (Fig. 17, col. 5, lines 29-46, and col. 9, lines 21-23, col. 11, lines 52-55).

**Regarding claim 13:**

The method in claim 12, wherein the method further comprises a step for generating training samples (col. 13, lines 19-30) to realize an automated learning system for face posture recognition (col. 13, lines 63-65).

**Regarding claim 15:**

The method in claim 14, wherein the method further comprises a step for generating training samples (col. 13, lines 19-30) to realize an automated learning system for face posture recognition (col. 13, lines 63-65).

**Regarding claim 16,** see rejection made to claim 1, as it addresses the rejection to the method of this apparatus.

**Regarding claim 17:**

The apparatus of claim 16, wherein said processing means further comprises a hardware system consisting of disparate cameras at disparate locations, images from which are used for said face modeling (col. 11, line 62 to col. 12, line 2).

**Regarding claim 18**, see rejection made to claim 2, as it addresses the rejection to the method of this apparatus.

**Regarding claim 19**, see rejection made to claim 3, as it addresses the rejection to the method of this apparatus.

**Regarding claim 20**, see rejection made to claim 6, as it addresses the rejection to the method of this apparatus.

**Regarding claim 21**, see rejection made to claim 7, as it addresses the rejection to the method of this apparatus.

**Regarding claim 22**, see rejection made to claim 8, as it addresses the rejection to the method of this apparatus.

**Regarding claim 23**, see rejection made to claim 9, as it addresses the rejection to the method of this apparatus.

**Regarding claim 24**, see rejection made to claim 10, as it addresses the rejection to the method of this apparatus.

**Regarding claim 25**, see rejection made to claim 11, as it addresses the rejection to the method of this apparatus.

**Regarding claim 26:**

The apparatus of claim 16, wherein the apparatus further comprises a means for using said combination of said demographics and said affine line properties for said face modeling, followed by novel view generation of the face undergoing rigid transformation using standard rendering tools (Fig. 17, col. 3, lines 54-65, col. 5, lines 29-46, and col. 9, lines 21-23, col. 11, lines 52-55).

**Regarding claim 27**, see rejection made to claim 13, as it addresses the rejection to the method of this apparatus.

**Regarding claim 28:**

The apparatus in claim 27, wherein the apparatus further comprises means for coding video streams of face images (col. 12, lines 11-13) where the face undergoes rigid motion only (col. 3, lines 61-65).

**Regarding claim 30**, see rejection made to claim 15, as it addresses the rejection to the method of this apparatus.

***Examiner's Note***

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571)



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270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Vanchy Jr.  
Examiner  
Art 2624  
(571) 270-1193  
[Michael.Vanchy@uspto.gov](mailto:Michael.Vanchy@uspto.gov)



**SAMIR AHMED**  
SUPERVISORY PATENT EXAMINER